REMARKS/ARGUMENTS

Receipt of the Office Action dated January 29, 2004 is hereby acknowledged. In that Action, the Examiner rejected claims 1-38 as allegedly anticipated by Traiman (U.S. Patent Application Publication No. 2002/0144073).

With this response, Applicant amends claims 1, 3-9, 12, 29-30 and 32, and cancels claims 2 and 31. Reconsideration is respectfully requested.

I. CLAIM REJECTIONS

A. Claim 1

Claim 1 stands rejected as allegedly anticipated by Traiman. Applicant amends claim 1 to indicate a distinction between operations performed by a software stream and operations performed by a hardware device. Further, Applicant amends claim 1 to indicate that these operations take place concurrently. These amendments are made to more clearly define over Traiman.

Claim 1 recites, "performing, **by a software stream**, heap memory operations **on a first end of a linked list** of free heap memory of a heap pile; and concurrently returning, **by a hardware device**, a return block of heap memory to the heap pile **at a second end of the linked list** of the free heap memory." Traiman fails to expressly teach or fairly suggest differences in operational characteristics between a software stream and a hardware device. Further, Traimain's disclosure at [0038] fails to teach or fairly suggested heap memory operations occurring on each end of the linked list concurrently.

Based on the foregoing, Applicant respectfully submits that claim 1, as well as all claims which depend from claim 1 (claims 3-11), should be allowed. Applicant cancels claim 2 as some of its limitations are now contained in amended claim 1. Applicant amends claims 3-9 to reflect the amendments to claim 1.

B. Claim 4

Claim 4 stands rejected as allegedly anticipated by Traiman.

Claim 4 recites, "returning, by the software stream, a second block of heap memory by placing the second block of heap memory at the first end of the linked list." Thus, in combination with the limitations of claim 1, claim 4 requires

concurrent returning by both the software stream and the hardware device. Traiman fails to teach or fairly suggest concurrently returning, whether by a software stream or by a hardware device.

Claim 4 is allowable for at least the same reasons as claim 1 from which it depends, as well as the additional limitations therein.

C. Claim 7

Claim 7 stands rejected as allegedly anticipated by Traiman.

Claim 7 recites, "removing, by the software stream, heap memory from the first end of the linked list." Thus, in combination with the limitations of claim 1, claim 7 requires concurrent removing of heap memory on a first end by the software stream and returning of heap memory to the second end by the hardware device. Traiman fails to teach or fairly suggest concurrently removing and returning, whether by a software stream or by a hardware device.

Claim 7 is allowable for at least the same reasons as claim 1 from which it depends, as well as the additional limitations therein.

D. Claim 12

Claim 12 stands rejected as allegedly anticipated by Traiman. Applicant amends claim 12 to correct an antecedent basis problem, and not to define over any prior art.

Claim 12 specifically recites, "removing, by a software stream, the first block from the linked list ...; and returning, by a hardware device, a return block to the linked list by placing the return block at the end of the linked list." Traiman fails to teach or fairly suggest these limitations.

Based on the foregoing, Applicant respectfully submits that claim 12, and all claims which depend from claim 12 (claims 13-18), should be allowed.

E. Claim 19

Claim 19 stands rejected as allegedly anticipated by Traiman.

Claim 19 recites, "allowing a software thread to add and remove blocks of heap memory from a linked list of free blocks of heap memory in a last-in/first-out (LIFO) fashion at a first end of the linked list; and allowing a hardware device to add blocks of heap memory to the linked list of free blocks of heap memory at a

second end of the linked list." Traiman fails to teach or fairly suggest that the software stream could or should add and remove blocks from the beginning of the linked list in a LIFO fashion while a hardware device returns blocks to the end of the linked list.

Based on the foregoing, Applicant respectfully submits that claim 19, and all claims which depend from claim 19 (claims 20-28), should be allowed.

F. Claim 29

Claim 29 stands rejected as allegedly anticipated by Traiman. Applicant amends claim 29 in several respects. First, Applicant removes the requirement for a graphics card and video display as these limitations are not required to define over Traiman. Next, Applicant adds the description of the heap pile, the beginning and end of the heap pile, and simultaneous operations to more clearly define over the system of Traiman.

Claim 29 specifically recites, "wherein the software stream executed on the microprocessor removes blocks of heap memory from a beginning of the heap pile; and simultaneously the hardware device returns blocks of heap memory to an end of the heap pile." Traiman fails to teach or fairly suggest a difference in operational characteristics between a software stream and a hardware device. Further, Traimain's disclosure at [0038] fails to teach or fairly suggested heap memory operations occurring on each end of the linked list simultaneously.

Based on the foregoing, Applicant respectfully submits that claim 29, and all claims which depend from claim 29 (claims 30-38), should be allowed. Applicant cancels claim 31 as amended claim 29 now contains some of those limitations. Applicant amends claims 30 and 32 to reflect the amendments to claim 29.

II. CONCLUSION

Applicant respectfully requests reconsideration and allowance of the pending claims. If the Examiner feels that a telephone conference would expedite the resolution of this case, he is respectfully requested to contact the undersigned.

In the course of the foregoing discussions, Applicant may have at times referred to claim limitations in shorthand fashion, or may have focused on a particular claim element. This discussion should not be interpreted to mean that the other limitations can be ignored or dismissed. The claims must be viewed as a whole, and each limitation of the claims must be considered when determining the patentability of the claims. Moreover, it should be understood that there may be other distinctions between the claims and the prior art which have yet to be raised, but which may be raised in the future.

Applicants respectfully request that a timely Notice of Allowance be issued in this case. If any fees or time extensions are inadvertently omitted or if any fees have been overpaid, please appropriately charge or credit those fees to Hewlett-Packard Company Deposit Account Number 08-2025 and enter any time extension(s) necessary to prevent this case from being abandoned.

Respectfully submitted,

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